

## **HRISHIKESH ARVIND CHANDANPURKAR**

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### **UNIVERSITY EDUCATION**

- 2016 Ph.D. Earth System Science (ESS), University of California, Irvine, CA  
Advisor: Dr. James Famiglietti  
Dissertation: Global Continental Discharge and its Effects on Ocean and Climate
- 2009 M.Sc. Environmental Sciences, University of Pune, India  
Advisor: Dr. Himanshu Kulkarni  
Thesis: Understanding the water resources in Naukuchiatal area of Nainital district, Uttarakhand, with special reference to the hydrogeological characters
- 2007 B.Sc. Geology, Fergusson College, University of Pune, India  
Project: Field based orientation project on basic Hydrogeology of Deccan Basalt

### **ADDITIONAL EDUCATION/ CERTIFICATION**

- 2016 Summer School in Modeling Arctic Climate System,  
International Arctic Research Center (IARC), University of Alaska Fairbanks,  
USA  
Project: Climate Responses to Changes in Arctic Sea Ice
- 2011 Post-Graduate Diploma in Geoinformatics  
Centre for Development of Advanced Computing (CDAC), Pune, India  
Project: Simulation of Glacial Lake Outburst Flood event for Northern Sikkim District, India
- 2009 Post-Graduate Diploma in Sustainable Management of Natural Resources and Conservation  
Ecological Society, Pune, India
- 2006 Diploma in Geopolitics and International Relations  
Jagannath Rathi Vocational Guidance and Training Institute, Pune, India

### **RESEARCH EXPERIENCE**

- 2018 – present Caltech- JPL Postdoctoral Scholar, Jet Propulsion Laboratory, Pasadena, CA
- Apply multiple coherent datasets over global land and ocean to study changes in the global terrestrial water cycle
  - Improve discharge forcing to global ocean-ice models
- 2016 – 1/2018 Research Associate, Colorado Center for Astrodynamics Research,  
University of Colorado, Boulder, CO
- Investigate variability in terrestrial water storage and its contribution to the variability in global mean sea level at different time scales
  - Characterize sea level anomalies from multiple altimeters along the Greenland continental shelf
- 8/2015 – 1/2016 Graduate Visitor, Advanced Study Program (ASP),  
National Center for Atmospheric Research (NCAR), Boulder, CO
- Improve continental discharge forcing dataset for ocean-ice models based on water mass balance method

- 2011 – 2016

  - Conduct multiple experiments with ocean-ice component of Community Earth System Model (CESM) to investigate the oceanic and climate response to the improved continental discharge forcing

Research Assistant, University of California, Irvine, CA

  - Compute ensembles of global continental discharge using multiple remote sensing and reanalysis datasets of water mass balance components over land and ocean
  - Investigate the relationship between sea surface salinity and continental discharge
- 2009 – 2010

Assistant Environmental Analyst, VK:e environmental, Pune, India

  - Prepare inventory of native plant species suitable for urban landscaping
  - Examine various sustainable building solutions recommended by Indian Green Building Council (IGBC) in the context of Pune climate
  - Provide consultation to client developers regarding passive and active Eco-Housing solutions suitable for their construction projects after conducting site analysis and working in collaboration with architects, site engineers, and landscapers
- 2006 – 2009

Research Intern, Advanced Center for Water Resource Development and Management (ACWADAM), Pune, India

  - Collect field hydrogeological data at watershed-scale in Maharashtra and Uttarakhand, India
  - Analyze collected data to generate hydrogeological maps, and develop a conceptual model of the subsurface hydrology and surface water-groundwater interactions
  - Participate in regular meetings with stakeholders including local communities, government officials, and NGO members
  - Conduct capacity building training exercises for the local community to facilitate development of a citizen environment monitoring program

## PUBLICATIONS AND SELECTED PRESENTATIONS

**Chandanpurkar, H. A.**, J.T. Fasullo, R.S. Nerem, J.T. Reager, and J.S. Famiglietti (*in preparation*), Integrative Asymmetries in ENSO-Precipitation-Terrestrial Water Storage relationships

J.T. Reager, D.N. Wiese, A.S. Gardner, F.W. Landerer, and **H.A. Chandanpurkar** (*in preparation*), Rapid sea level ‘burst’ events in the global mass balance record

**Chandanpurkar, H. A.**, J.T. Reager, J.S. Famiglietti, and T. H. Syed, 2017: Satellite- and reanalysis-based mass balance estimates of global continental discharge (1993-2015), *Journal of Climate*, <https://doi.org/10.1175/JCLI-D-16-0708.1>

**Chandanpurkar, H. A.**, S.G. Yeager, J.T. Reager, and J.S. Famiglietti (2016), Role of continental discharge in ocean and climate dynamics through influence on ocean salinity, *Ocean Science Meeting, Oral presentation*

**Chandanpurkar, H. A.**, S.G. Yeager, J.T. Reager, and J.S. Famiglietti (2016), Ocean’s sensitivity to uncertainties in continental discharge, *CESM Ocean Model Working Group Meeting, Oral presentation*

**Chandanpurkar, H. A.**, S.G. Yeager, J.T. Reager, and J.S. Famiglietti (2015), Sensitivity of ocean processes to changes and uncertainties in global river discharge, *American Geophysical Union Fall Meeting, Poster*

**Chandanpurkar, H. A.**, J.T. Reager, T. H. Syed, and J.S. Famiglietti (2014), How much continental freshwater do global oceans receive? *Ocean Science Meeting, Poster*

**Chandanpurkar, H. A.**, J.T. Reager, C. H. David, J.S. Famiglietti, and T. H. Syed (2012), Global runoff estimates derived from GRACE dataset, *American Geophysical Union Fall Meeting, Poster*

**Chandanpurkar, H. A.** and K.A. Subramanian (2008), Odonata of Naukuchiatal, a tectonic lake in Western Himalaya, India, *International Symposium of Odonatology, Poster*

### **AWARDS AND GRANTS**

7/2016	Travel Grant for Summer School in Modeling Arctic Climate System, International Arctic Research Center (IARC), University of Alaska Fairbanks, USA
8/2015 – 1/2016	Advanced Study Program Graduate Visitor fellowship, National Center for Atmospheric Research (NCAR), Boulder, CO
2014	Travel Grant for CESM tutorial, National Center for Atmospheric Research (NCAR), Boulder, CO
2008	World Wildlife Fund grant to lead efforts to document Siberian Crane ( <i>Leucogeranus leucogeranus</i> ) species in northern India
2007	Dr. Anil Lalwani Award in Hydrogeology, Fergusson College, University of Pune, India

### **WORKSHOPS, MEETINGS, AND TRAINING PROGRAMS**

2016	International Arctic Research Center Summer School on Arctic Climate Modeling, Fairbanks, AK
2016	NASA Sea Level Change Science Team meeting, Norfolk, Virginia
2016	Predictive Modeling with Python, UCI Data Science Initiative, Irvine, CA
2016	NCL Workshop, NCAR, Boulder, CO
2015	Object-Oriented Fortran training, NCAR, Boulder, CO
2014	CESM tutorial, NCAR, Boulder, CO
2013	Using GRACE Data for Water Cycle Analysis and Climate Modeling, Caltech, Pasadena, CA

### **PROFESSIONAL ACTIVITIES**

2017, 2018	Member, Editorial Advisory Board for the book: <i>Environmental Impacts of Tourism in Developing Nations</i> , IGI Global
2016	Journal Reviewer: <i>Climatic Change</i>
2012 – present	Member, American Geophysical Union

### **COMPUTER SKILLS**

Python, Matlab, R, NCL, CDO, NCO, Shell scripting, UNIX, Fortran, IDL, ENVI, ERDAS Imagine, PCI Geomatica, ArcGIS, QGIS, GRASS GIS, Google Earth Engine, AutoCAD, Surfer, C, C++, Java, SQL, Git, LaTeX

### **MODELS**

Model usage: CESM, WRF, CaMa-Flood, MODFLOW, HEC-RAS, ANUGA Hydro  
Model Development: Co-developed a fully coupled carbon cycle box model for a graduate-level course project

### **FIELD METHODS**

Field hydrology and hydrogeology: Measuring water quality and quantity parameters, lake bathymetry, soil moisture, conducting pumping tests, geological mapping  
Terrestrial ecosystems and biogeochemistry: Sampling biodiversity using quadrat, transect methods, measuring leaf gas exchange, soil CO<sub>2</sub> fluxes using LI-COR instruments

### **TEACHING EXPERIENCE**

**Instructor**, University of California, Irvine, CA

Lower Division Undergraduate Course:

2015 Earth System Science (ESS) 3: Oceanography (63 Students)

**Teaching Assistant**, University of California, Irvine, CA

Graduate Course and Upper Division Undergraduate Course:

2016 ESS 238/ 138: Remote Sensing (11 students)

Instructor: Dr. Eric Rignot

Upper Division Undergraduate Courses:

2013 ESS 116: Data Analysis (42 students)

Instructor: Dr. Mike Pritchard

2012 ESS 116: Data Analysis (61 students)

Instructor: Dr. Isabella Velicogna

Lower Division Undergraduate Courses:

2015 ESS 3: Oceanography (393 students)

Instructor: Dr. Julie Ferguson

2013 ESS 5: The Atmosphere (386 students)

Instructor: Dr. Julie Ferguson

2012 ESS 3: Oceanography (324 students)

Instructor: Dr. Francois Primeau

**Teaching and Outreach Volunteer**

2016 Learner's Academy, Pune, India

- Introduce earth system science to high school students (~80 students)

2015 Annual Graduate Retreat, Earth System Science Department, University of California, Irvine (~40 students)

- Lead a workshop on 'Personal finance and investing for graduate students'

2014 Annual Graduate Retreat, Earth System Science Department, University of California, Irvine (~40 students)

- Lead a tutorial on 'Data analysis using Python'

- Lead a workshop on 'Photographing earth system processes'

2014 Orange County Water Festival, Irvine, CA

- Demonstrate 'Environmental Issues in the Global Oceans' to K-12 students (~40 students)

2013 La Jolla Indian Reservation, CA

- Lead a lab on field hydrology methods during Summer Camp for K-12 students (~25 students)

2012, 2013 Aquarium of the Pacific, Long Beach, CA

- Address public queries on NASA Earth remote sensing missions at 'Ask a scientist' booth during 'NASA night' event

**GUEST LECTURES**

2016 University of California, Irvine, CA

- 'Concept of geoid and gravimetric remote sensing using GRACE', ESS 138/ 238: Remote Sensing (11 students)

2013 University of California, Irvine, CA

- 'Advanced data analysis methods', ESS 116: Data Analysis (42 students)

2012 University of California, Irvine, CA

- 'Marine ecosystems', ESS 3: Oceanography (324 students)

2008, 2010 Environmental Sciences department, University of Pune, India

- Lead field study tour on geology and biodiversity of Western Ghats for visiting undergraduate students from Salisbury University, MD

2009 Shrimati Bhanuben Nanavati College of Architecture, Pune, India

- Teach ‘Environmental Technologies and Waste Management’ modules to Master of Architecture students
- 2008 Central Himalayan Rural Action Group (CHIRAG), Uttarakhand, India
- Lecture on ‘Hydrogeological setting in Naukuchia area, Nainital District’ to CHIRAG staff during training workshop on participatory groundwater management

### **SERVICE**

- 2011 Volunteer, *in-situ* soil moisture measurement, CA
- 2010 Participant, Pune Bird Census, Pune, India
- 2009 Team leader, Great Himalayan Bird Count, Dehradun, India
- 12/2004 – 1/2005 Volunteer, Tsunami Relief Camp for 500 victims, Kerala, India
- 2002 – 2004 Member, National Cadet Corps, India (Rank: Lance Corporal)

### **CERTIFICATIONS**

- 2016 PADI Open Water Diver
- 2018 AIARE Avalanche Companion Rescue

### **LANGUAGES**

English, Marathi, Hindi, German (basic, 2-year course), Sanskrit (basic, 3-year course)

- Website** <http://hrishikeshac.wix.com/hchandan>
- Blog** <http://hrishichandanpurkar.blogspot.com>